However, it is surely an independent species, differing in range and ploidy from the true *Phlebodium aureum* (L.) J. E. Smith. *Phlebodium pseudoaureum* is widely distributed throughout tropical America, whereas *P. aureum* appears to be absent from Central America and from Colombia to Bolivia.

**Tectariaceae** Lellinger, fam. nov.—TYPE: *Tectaria* Cav.

Rhizomata stipitesque ad basin squamosi, squamosis angustis saepe fibrillosis concoloribus non lanceolatis vel ovatis bicoloribusque. Rhachides fuscae teres vel sulcatae, sulcis continuis non interruptis per sulcos costarum, plerumque saltem leviter pilosae, pilis multicellularibus plerumque catenatis, aliquando glabrae vel squamosae.

This family is established for the genus *Tectaria*, its close allies, including the genera *Ctenitis*, *Aenigmopteris*, *Ataxipteris*, *Psomiocarpa*, *Lastreopsis*, *Atalopteris*, *Pleocnemia*, *Pteridrys*, *Heterogonium*, *Camptodium*, and *Stenosemia*, and its more distant allies, *Pleuroderris*, *Dictyoxiphium*, *Hypoderris*, and *Amphiblestra*.

The name Tectariaceae replaces in part the illegitimate name Aspidiaceae, which is based on the illegitimate generic name *Aspidium*. Under Art. 18.1 of the present Code, such a family name cannot be conserved because it is based on an illegitimate generic name. The names Hypoderriaceae Ching and Dictyoxiphiaceae Ching are not validly published because they lack a Latin description, according to Pichi Sermolli (Webbia 25:273. 1970). I do not believe either has received a Latin description, and there is no provision in the Code to validate a family description on the basis of a validly described monotypic genus. There appear to be no other families based on these generic names. Ching applied his names to monotypic families. In contrast, the name Aspidiaceae has been used in an exceedingly broad sense far beyond my concept of Tectariaceae, for instance by Copeland (Gen. Fil. 100–154. 1947). It would be confusing to adopt it or Hypoderriaceae or Dictyoxiphiaceae for my concept of Tectariaceae.—DAVID B. LELLINGER, Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560.

**Terrestrial *Psilotum* in East-Central Alabama.**—On 27 October 1986, plants of *Psilotum nudum* (L.) P. Beauv. (Psilotaceae) were discovered in Lee County, Alabama, at the southern extreme of the Piedmont Plateau in a mixed pine-deciduous woodland south of Loblockee Creek, near County Highway 11, about five miles north of Loachapoka. The population represents another extension of the known range of the species more than 240 kilometers inland from the Gulf Coast and is apparently a new state record. An effort to determine the extent of the population was made by several students and myself during the following week. More than 100 plants, usually in small patches of 5–10 aerial shoots/$m^2$, were located within an area comprising ca. 10 hectares, outside of which no additional plants were observed. Eight specimens representing the size range of shoots were transplanted to containers and moved to the Botany Greenhouses at Auburn University so that comparisons between greenhouse-protected plants and those in the field population could be made during the onset of winter. These

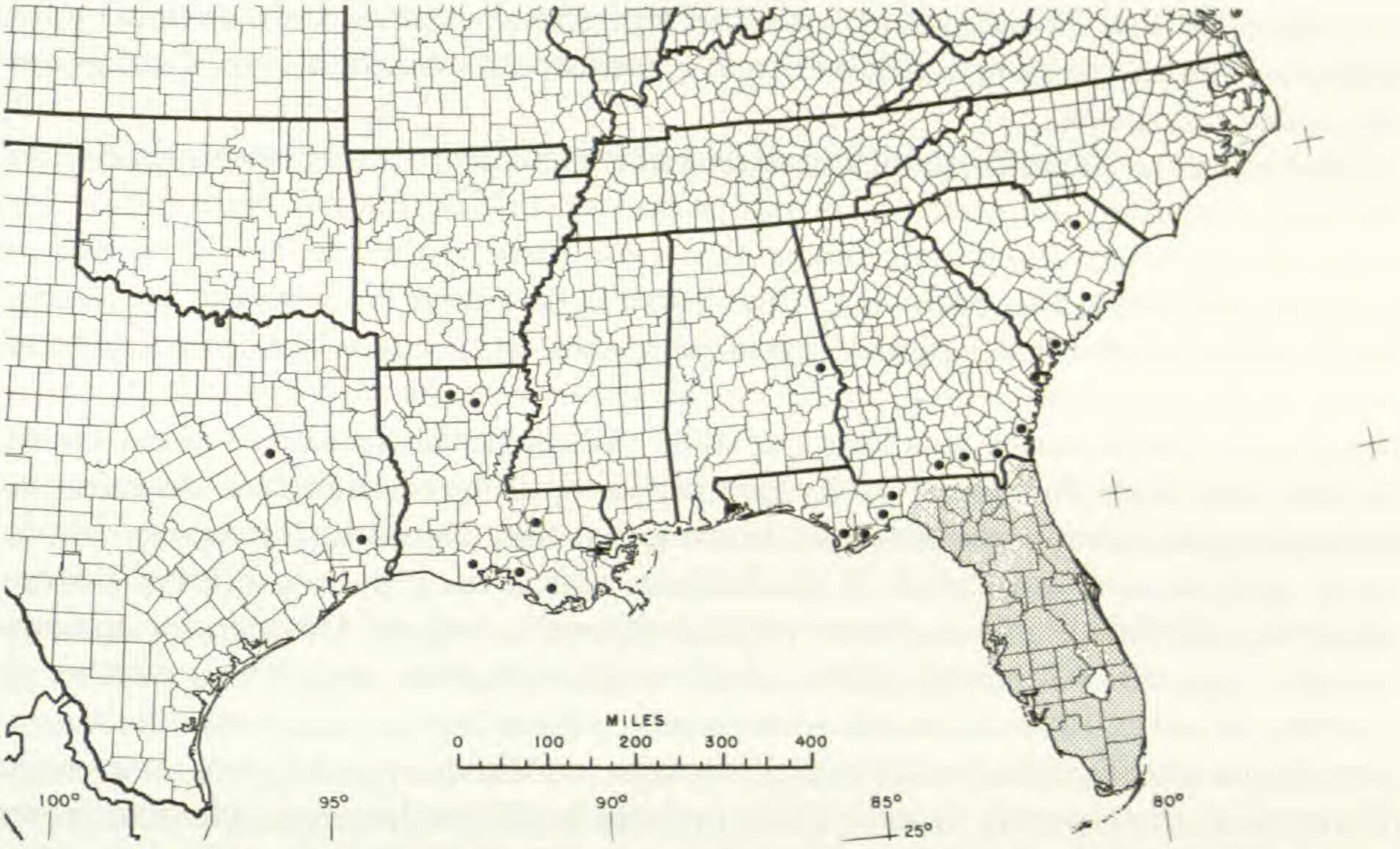


FIG. 1. County distribution of *Psilotum nudum* in the southern United States excluding peninsular Florida (shaded).

observations were continued through June 1987 when the first aerial shoots of *Psilotum* emerged in the field. Since this new locality differs markedly from most others previously reported for this species, this note will describe the habitat and discuss some aspects of this and other terrestrial populations while further studies are in progress.

Distribution of *Psilotum nudum* in the southern United States, where it reaches its northernmost limit in North America, is shown by county dots (except in peninsular Florida) in Figure 1. The other distinctly inland sites in addition to the Alabama locality reported above are: Freestone County, Texas (Lodwick, Amer. Fern J. 65:62. 1975); Lincoln Parish (Rhodes, Sida 3:525. 1970) and Ouachita Parish, Louisiana (Thieret, *Louisiana Ferns and Fern Allies*, pp. 32–33. 1980); and Darlington County, South Carolina (Radford et al., *Manual of the Vascular Flora of the Carolinas*, p. 3. 1968). The map is based upon these and various other sources (Jones et al., Sida 3:359–364. 1969; Clewell, *Guide to the Vascular Plants of the Florida Panhandle*, pp. 51–52. 1985; Snyder & Bruce, *Field Guide to the Ferns and Other Pteridophytes of Georgia*, p. 254. 1986) as well as personal observations in northern Florida. With statements such as "various habitats, epiphytic, epipetric, or terrestrial . . . ." (Radford, *loc. cit.*) or "In soil, humus, moss mats, or rotten wood in low to mesic woods" (Thieret, *loc. cit.*), certain authors generally acknowledge that *Psilotum* may grow in soil, but many imply that the species is primarily either epiphytic or grows on fallen trees, tree stumps, or palmetto bases (Lellinger, *A Field Manual of the Ferns and Fern Allies*, p. 49. 1985; Mickel, *How to Know the Ferns and Fern Allies*, p. 180. 1979). Most of the *Psilotum* sites in northern Florida, Louisiana, Texas, South Carolina, and now Alabama, too—i.e., the populations at the northern limits of the species distribution—are indeed terrestrial. Due to floristic similarities apparent between one

Louisiana locality (Rhodes, *loc. cit.*) and the one described below, one might expect additional populations to be found elsewhere, if not commonly, throughout the entire Southeast.

The Alabama site consists of formerly cultivated land that was abandoned to natural succession about 45 years ago (based upon ring counts determined for some of the largest trees and information from local residents). Shallow tillage furrows still mark the surface of the hillside that now is forested by young hardwoods and scattered pines. The larger pines were harvested for pulpwood about 18–19 years ago. The property on which most of the *Psilotum* plants were found was purchased by this writer in 1977. Although the variety of plant life at the site has been the object of my continued scrutiny for nearly a decade, no *Psilotum* specimens were observed there until 1986. Dominant overstory hardwood species are sweetgum (*Liquidambar styraciflua*), yellow-poplar (*Liriodendron tulipifera*), and northern red oak (*Quercus rubra*). Understory species include dogwood (*Cornus florida*), black walnut (*Juglans nigra*), red mulberry (*Morus rubra*), and Florida maple (*Acer saccharum* subsp. *floridanum*). The major low shrubs are Carolina buckthorn (*Rhamnus caroliniana*) and brook euonymus (*Euonymus americanus*); woody vines include Japanese honeysuckle (*Lonicera japonica*), greenbrier species (*Smilax glauca* and *S. rotundifolia*), and muscadine grape (*Vitis rotundifolia*). Perennial herbs observed during various seasons over the past ten years include *Chasmanthium sessiliflorum, Trillium underwoodii, T. cuneatum, Uvularia perfoliata, U. sessilifolia, Galium uniflorum, Botrychium virginianum, B. biternatum*, and *Asplenium platyneuron*. Plants of *C. sessiliflorum, G. uniflorum*, and the ferns dominate the herbaceous ground cover during the fall throughout the area where *Psilotum* was found.

The substrate on which the woodland described above has developed is typical of the Alabama Piedmont: red clays formed from gneissal granite. Shallow topsoil only a few centimeters thick overlays the red, rocky soil, and a heavy humus layer often 3–6 cm thick is present. Rotting pines killed by dark beetles several years ago are scattered on the forest floor, partially covered by leaf litter and humus. The underground portions of the *Psilotum* plants are located mainly within the leaf litter and uppermost organic soils.

Aerial stems of field specimens of *Psilotum* were still rather small (only 10 cm long or less) when a mild frost occurred in November 1986. Shoots of the largest specimens were branched in the typical dichotomous pattern six or more times, but several were only 2–3 cm tall and were branched once or not at all. The length of stem increments between branch points varied considerably from plant to plant, and these differences remained evident in and diagnostic for certain greenhouse specimens in growth occurring subsequent to transplantation. Most transplanted specimens remained green and apparently healthy, but three of the eight potted plants wilted and died within a week of being moved. The surviving ones showed no evident shock, continued to grow without loss of vigor, and attained heights exceeding 15 cm during the winter and spring of 1986–87. They remained sterile through the first week of October 1987. In the field, most aerial stems exposed above the leaf litter turned brown, softened, and dried out during November 1986 before any "killing" frost occurred. The pattern of deterioration

in aerial stems commonly was from the base up, the tips of some specimens remaining green well into December, when the first subfreezing temperatures of the season occurred.

Underground stems (or rhizomes) in specimens selected and dug for vouchers (deposited at AUA and MICH) were branched in the coralloid pattern typical of *Psilotum*. Withered and dried aerial stems, apparently remnants from the 1985 season, were observed to originate from both aerial and underground stems at distances ranging from 2 to 20 mm behind the location of the stem of the 1986 season. One branched rhizome with an axis 12 cm long had several other erect lateral "stubs" where stems of earlier years evidently once were borne. No living aerial stems were observed to bear sporangia in 1986, and the withered stems for the previous year also showed no sporangia. Since the fall of 1986 was unusually mild, it would seem that sporulation probably could occur only very rarely (if ever) at this location. The extensive area covered by the field population, its development in an area that formerly was cultivated, the number of plants present, and their perennial sterility (ensured by annual die-back of aerial stems) stand as a combination of factors suggesting that propagation by some asexual means may be occurring at this site.

The habitat type in which this population of *Psilotum* now exists is rather common in Alabama and other southeastern states. That this species may occupy other similar sites yet only infrequently be detected may be the actual case, but factors accounting for this possibility warrant some discussion. Due to their small size, the shoots are very inconspicuous. At the Alabama locality, they are made even more obscure because of close superficial resemblance to plants of *Smilax*, *Euonymus*, and *Galium* that are abundant, also green, short, stubby, and branched due to browsing by white-tail deer. Furthermore, it seems that the inland populations consist only of vegetative plants even as late as November. If sporulating plants should develop, they would appear only very late in the fall (or winter) when few persons familiar with *Psilotum* would likely chance upon them while conducting routine field research. Our 1986 census of the population revealed numerous vegetative shoots, but more plants were located during August and September of 1987 within the same area that had been closely checked a year earlier. In one case, in Hawaii, *Psilotum* grows as a non-green rhizomorph deep within dark lava tubes (Wagner, pers. comm.) without forming typical aerial stems or sporangia, so the species seemingly could live primarily as rhizome forms in other parts of its range, too. Only further demographic studies and observations can test this hypothetical possibility concerning the scarcity of inland collections of *Psilotum* from woodland habitats. In the meantime, features of the habitat of the only known Alabama population of *Psilotum* suggest that it may occur in (and that we should search for) other inland and upland sites.

I acknowledge with gratitude the assistance of Alvin Diamond, Susan Scott, Daureen Miller, Harland Hendricks, and Charlotte Tanner in locating plants of *Psilotum* at this locality and in determining the apparent limits of the population. I also thank Herb Wagner for his helpful comments and encouragement in preparing this report.—JOHN D. FREEMAN, Department of Botany and Microbiology, Auburn University, AL 36849.